UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,060	07/23/2008	Holger Stenzel	KURARAY-0013	7253

23599 7590 12/07/2010

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER	
SLAWSKI, MAGALI P	

ART UNIT	PAPER NUMBER
1728	

NOTIFICATION DATE	DELIVERY MODE
12/07/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/593,060
Filing Date: July 23, 2008
Appellant(s): STENZEL, HOLGER

Mr. Brion P. Healey
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 13, 2010 appealing from the Office action mailed May 19, 2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application: 1-7 and 12-18.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. All art rejections that use Knaus (US 5,190,706) as the *primary* reference have been withdrawn.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

4,316,868	Esposito et al.	2-1982
5,190,706	Knaus	3-1993
2002/0067656 A1	Schuchardt	6-2002
4,096,069	Postavnichev et al.	6-1978

Striegel, A. "Determining the vinyl alcohol distribution in poly(vinyl butyral) using normal-phase gradient polymer elution chromatography." Journal of Chromatography A, 971 (2002) 151-158

Chung, C. Extrusion of Polymers Theory and Practice, 2000 pp 323 and 327

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esposito et al. (US 4,316,868), henceforth **Esposito,** in view of **Knaus** (US 5,190,706).

Regarding **claim 1**, Esposito teaches providing two melt streams (2:44-47), mixing additives into one stream (dye or pigment, 5:10-11) and using coextrusion in a single die to combine the streams (2:52-53). The polymer mass starts with PVB (5:66). Esposito teaches a main stream and a subsidiary stream (2:43-47), the latter of which has a pigment as the additive (5:10-11). Esposito teaches coextruding two melt streams of different colors to form film or sheet with at least two areas of different color intensity (windshield, 1:21-26).

Applicant has claimed that the film is "suitable for use as an intermediate layer in laminated glazing." This recitation does not carry patentable weight because it merely describes the intended use of the film without further defining the film itself or the

method by which it is made. The new recitation does not include, for example, an active step, a structural feature or a material.

Esposito does not teach forming the two streams by dividing a single polymer melt. However, Knaus teaches that beginning with a single polymer melt and dividing it is an equally effective alternative (5:67-6:3, figure 5) to beginning with two separate polymer melts (figure 1). Therefore, it would have been obvious to one of ordinary skill in the art to substitute the use of single polymer melt for the use of two in order to achieve predictable results with a reasonable expectation of success.

Regarding **claim 6**, Esposito teaches extruding one stream through a die piece with a wedge-shaped partial area (2:35-36) and one stream through a die piece with a torpedo-shaped partial area (2:31).

Regarding **claim 7**, Esposito teaches adding a pigment (5:11).

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Schuchardt** (US 2002/0067656).

Regarding **claims 2** and **3**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer.

Esposito does not teach using a static or dynamic mixer. However, Schuchardt teaches that dynamic mixers mix faster than static mixers (0006). Therefore, it would have been obvious to one of ordinary skill in the art to use a dynamic mixer in the

method taught by Esposito because Schuchardt teaches doing so to save time. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine the use of a dynamic mixer with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Claims 4-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of Postavnichev et al. (US 4,096,069), henceforth **Postavnichev**.

Regarding **claims 4-5**, Esposito does not teach filtering. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter the melt taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 14**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the two streams are separated but before they are recombined for extrusion, the secondary flow (figure 5:52) to which the additives

(figure 5:58) are added passes through a static mixer (figure 5:61b) after the additives are added. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 16**, Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to caim 1 above, and further in view of **Striegel** (2002).

Regarding **claims 12** and **13**, Esposito does not disclose the degree of acetylation of the PVB. However, acetylation is a result effective parameter because the presence of acetyl groups affects both crosslinking and hydrophobicity. Therefore it would have been obvious to one of ordinary skill in the art to optimize the PVB's degree of acetylation in order to control its crosslinking and hydrophobicity. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention (MPEP 2144.05 [R-5] II).

Esposito does not disclose the residual PVOH in the PVB. However, Striegel establishes the PVOH content as a result effective parameter by teaching that it affects such properties as how well the PVB sticks to surface such as glass, how it crosslinks and how it mixes with other materials (page 152 paragraph 1). Therefore it would have been obvious to one of ordinary skill in the art to optimize the PVOH content of the PVB in order to control these properties. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention (MPEP 2144.05 [R-5] II).

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Chung** (2000) and **Postavnichev**.

Regarding **claim 15**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the two streams are separated but before they are recombined for extrusion, the secondary flow (figure 5:52) to which the additives (figure 5:58) are added passes through a static mixer (figure 5:61b) after the additives are added. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach passing the secondary flow through a pump before adding the additives. However, once the additives are added, the secondary flow immediately enters a static mixer. Chung teaches that the static mixer itself cannot pump the melt to push the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). Therefore, it would have been obvious to employ a pump because Chung teaches doing so to force the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of a pump with the use of the static mixer taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the relative timing of the pumping step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 17**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the additives (figure 5:58) are added to the secondary flow (figure 5:52), it passes through a static mixer (figure 5:61b) before the flows are recombined for extrusion. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Neither Knaus nor Esposito teaches passing either flow through a pump after mixing. However, the each flow is mixed in a static mixer (figure 5:61b and 61a). Chung teaches that the static mixer itself cannot pump the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). A pump placed upstream of the mixer pushes the melt through; a pump placed downstream of the mixer draws the melt through; these are functionally equivalent. Therefore, it would have been obvious to employ pumps after each mixer because Chung teaches doing so to propel the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of pumps with the use of the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the relative timing of the pumping step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a

filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Schuchardt**, **Chung** and **Postavnichev**.

Regarding **claim 18**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the additives (figure 5:58) are added to the secondary flow (figure 5:52), it passes through a static mixer (figure 5:61b) before the flows are recombined for extrusion. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach a dynamic mixer. However, Schuchardt teaches that dynamic mixers mix faster than static mixers (0006). Therefore, it would have been obvious to one of ordinary skill in the art to use a dynamic mixer in the method taught by Knaus because Schuchardt teaches doing so to save time. *Alternatively*, it would have been obvious to one of ordinary skill in the art to substitute dynamic mixers for the static

mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach passing either flow through a pump either before or after mixing. However, the each flow is mixed in either a static mixer (figure 5:61b and 61a) or a dynamic mixer, if one modifies Knaus in view of Schuchardt. Chung teaches that a static mixer itself cannot pump the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). Chung also teaches that commercially available dynamic mixers available in 2000 could not pump either and had an even higher pressure drop than static mixers (page 234). At the time of the invention, 2005, it would have been the case that many if not most dynamic mixers would have had limited pumping ability and that the pressure drop would still have been an issue. Therefore, it would have been obvious to employ pumps after each mixer because Chung teaches doing so to propel the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of pumps with the use of the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding claim the placement of the pumps, a pump placed upstream of the mixer pushes the melt through; a pump placed downstream of the mixer draws the melt through; these are functionally equivalent. Regarding the number of the pumps, it would have been obvious to one of ordinary skill in the art that two pumps can work together to amplify the effect of a single pump. Mere duplication of parts has no

patentable significance unless a new and unexpected result is produced. See MPEP 2144.04 VI B.

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

(10) Response to Argument

Most of Appellant's arguments are directed toward the rejections where Knaus is used as the primary reference. Since these rejections have been withdrawn, the examiner will not address these arguments. The examiner will address only the arguments directed to the rejections that use Esposito as the primary reference.

Regarding claim 1, Appellant argues that combining Esposito involves impermissible hindsight reconstruction. In response to Appellant's argument, first, Esposito is coextruding two different-colored streams of molten plastic to produce a bicolor article. Knaus is coextruding two different-colored streams of molten plastic to

produce a bicolor article. Esposito wants two streams and Knaus teaches a way to produce two streams. Introducing a step of dividing two streams of the same material to get two streams is only logical. Second, in response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Regarding claims 15 and 17, Appellant argues that Chung does not teach the use of a pump separate from the extruder screw to force the melt through a static mixer. In response to Appellant's argument, as stated in the rejection, the static mixer comes from Knaus (figure 5:61a). Knaus's flow-diverter does not include a screw to push the melt through the mixer. Chung teaches that the melt must be pumped by a screw. Therefore, Chung's screw is functioning as a pump and Chung's teaching establishes the necessity of a pump in the invention of Esposito modified in view of Knaus.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Magali P. Slawski/

Examiner, Art Unit 1728

Conferees:

/Jennifer K. Michener/

Supervisory Patent Examiner, Art Unit 1728**

/Anthony McFarlane/